

an establishment of an equilibrium in the gas mixture when exposed to the gas mixture, the first measuring electrode being a cermet electrode having at least one metal oxide component, the at least one metal oxide component being capable of reversible incorporation of oxygen;

a second measuring electrode catalyzing an establishment of an equilibrium in the gas mixture when exposed to the gas mixture; and

a solid electrolyte that is conductive for oxygen ions situated between the first and second measuring electrodes.

11. [(New)] The sensor according to claim 10, wherein the first measuring electrode is substantially composed of mixed oxides with a composition of one of TiNiNbO_x and FeNiMnO_4 .

12. [(New)] The sensor according to claim 10, wherein the metal oxide component is at least one of CeO_2 and Mn_2O_3 .

13. [(New)] The sensor according to claim 10, wherein the first measuring electrode is a mixed potential electrode including at least one of gold and silver.

14. [(New)] The sensor according to claim 10, further comprising a porous layer, the solid electrolyte being integrated into the layer.

15. [(New)] The sensor according to claim 14, wherein the layer contains at least one of promoters and catalysts at least in some areas.

16. [(New)] The sensor according to claim 10, further comprising:
a reference electrode exposed to a reference gas; and
at least one layer composed of an oxygen conducting solid electrolyte situated between the reference electrode and the measuring electrodes.

17. [(New)] The sensor according to claim 10, further comprising a porous layer extending between the first and second measuring electrodes, one of the first and second measuring electrodes being situated on a side of the sensor facing the gas